visible signs of deterioration. Our readers may recollect the description of the carriage before given, and we take this occasion to substitute another term for one used at that time for the second set of wheels; they are there called anti-friction wheels, and described as being placed on bevil axles. We would rather term them guide and safety wheels, for they guide the carriage, and restrain it to the rails, whose edge they command, and in the event of an axle of the bearing wheels giving way, these come in for use to bear the load, and carry it on till the progress can be safely stayed.

The driving or bearing wheels are without flanges, and obtain the full grip of the sole or tire upon the rails; this, it will be understood, gives greater power to make an ascent than can be commanded on iron rails, where the surface of union between the wheels and the rails is so small; one part of the experimental line is steeper than Holborn Hill, and although a very short length, yet it serves to shew something of the measure of power in such cases.

One great advantage that we have not yet enumerated is the less noisy character of the running upon wood than upon iron rails; and it may be noted that inasmuch as the road may be compared to one great frame or wooden grating, of longitudinal and cross sleepers, it presents an aspect of security and simplicity of construction. Common carpenters of the country would be well equal to it, and for the repairs; the revenue would be no gainer by the substitution of native for foreign timber, but the landed proprietor would, therefore this will not be regarded as one of its least recommendations, and we trust we have said enough to excite an active attention to the whole subject on the part of those who, like that body, are so deeply interested in it.

Payne's process of charging the wood with the solutions of lime and iron, forming an insoluble compound, has been adopted; this affords a double preservation, first, against decay, and next, as it intensely hardens and solidifies the wood, against the wear of abrasion; it procures a third advantage, which is a better biting surface for the wheels. It has in some sense the respective merits of iron, stone, and wood, and avoids the individual defects in application of each.

AGED AND INFIRM CARPENTERS' BENEVOLENT INSTITUTION.

We have seen it recently stated in the public prints that a grand bull-fight had been enacted, at which the youthful Queen of Spain and her court were present, the end being to raise funds towards the erection of a church; and we are quite familiar in this country with balls, concerts, and fancy fairs, for similar objects. Wherefore, then, may we not trace a ready connection between a theatrical performance and a Carpenters' Benevolent Institution,—such in fact it being that is resorted upon? The Royal Surrey Theatre is engaged for next Thursday evening, for the benefit of this excellent provident society, when a nautical drama, with other entertainments, are to be produced.

We have before addressed ourselves to the object of recommending this institution to the support of our readers and the whole building craft, and can only renew what we have so urged, and mark out this occasion as one in which a twofold gratification may be comprehended under one act of charitable sympathy. Charitable is perhaps hardly the word, for who knows amongst us whether of himself or his immediate connection he may not require the support of that buttress in later days which in these he is assisting to build up? We call upon every one who can afford to spare a night to give his presence on this occasion, to make up a bumper. An excellent, indeed it may be called a first-rate company of dramatists enjoy the privilege of representation in this house.

APPLICATION AND INTENT OF THE VARIOUS STYLES OF ARCHITECTURE.

When employed by its authors and inventors, the architecture of Attica and Ionia is faultless. The separate members of the building have a definite relation to the whole. They are aggregated by affinity and connected by apposition. Each one is in its destined place; no one is extraneous or superfluous; all are characterized by fitness and propriety. Grecian architecture is a composition of columns, which are intended to assemble themselves only in the form of a Grecian temple. They seek to enter into no other combination. Beauty and elegance result from their union. The long unvaried horizontal line of the entablature rests in stable tranquillity upon the ever ranging capitals below, and the conical shafts are repeated in unbroken symmetry. The edifice is perfect in itself.

The Grecian temple may be compared to a single crystal, and the laws by which it is constructed are analogous to the process of crystallization. Disturb the arrangement of the primitive molecules of the crystal, and they will set into a misshapen fragment. Increase the number of these crystals, allow them to fix themselves upon each other, and their individual regularity will be lost in the amorphous mass. Thus, in the Grecian temple, the component parts have settled themselves into a shape of perfect harmony, such as is required by their integral figure, but it is a shape which cannot be varied in its outline nor can it be changed in its proportions. Neither does it submit to be annexed to any other. Every attempt which is made to blend the temple with any other design, produces a lame and discordant effect. We must reject the arch, the noblest invention of architectural science. Portico cannot be duplicated. Twin columns cannot be raised in stories. No window can open into the cell. No wing can be added to the right or to the left which does not at once convince the observer that it has no real relationship to the centre which it obscures.

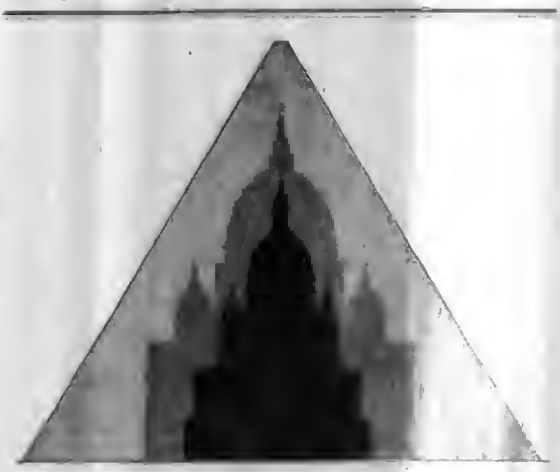
How could any other result be anticipated? The sacred architecture of Greece admits of no habitable interior. A cell of narrow dimensions, lighted by an aperture in the roof, and intended to contain a single statue, is the only chamber which can be placed within the walls of the temple. We are not required to enter into the fane. It is a monument which we are to contemplate from without, and which appears in its pride when considered as a portion of the surrounding landscape. The chaste columns and pure sculptures which are now mellowed by the hand of time to a sad and sober grey, originally shone with all the splendour of the East. Every moulding was distinguished by strongly contrasted colours; and the snowy whiteness of the Parian marble was concealed beneath the glowing layers of gold, azure, and vermilion. In the opinion of the Grecian architect, his building was seldom more than the framework of his sculpture. He never intended it for social worship. A temple was a shrine upon which decorations were to be displayed. The altar flamed before the portico. The votary was to offer up his sacrifice in the hypæthrum, looking around to the woods, the purpled hills, and the circling horizon.

From the science of its mechanical execution, aided by the transcendent skill of the sculptor, the beauties of the design of the Grecian architect are doubly enhanced. As masons, the Greeks carried the art of building to the highest excellence. The Grecian architect possessed the means which his mind required. His elements were few. Scarcely any variety of structure was required from his art. He placed a larger number of columns around the more sumptuous edifice, and a smaller number around the more humble structure: he raised the temple and the tomb. His career was definite; he saw the end of it. He was required to perfect, rather than invent. Grecian architecture submits itself to the judgment, and the judgment is satisfied.

Such were not the labours of the Gothic mason; he stops frustrated, but not in disappointment. Neither the quarries of Pentelicus nor the chisel of Phidias could assist him. Rude materials and still ruder hands were all that he could command. His architecture must depend upon its innate character and significance. The cathedral is to be considered rather as a forethought than as a finished specimen. It exhibits the effort that has been made to embody those abstract ideas of solemnity and grandeur which could not be fully realized or accomplished by human power. Still the effect has not failed; Gothic architecture appeals to the imagination, and fancy half supplies the deficiencies of the material scene. A Gothic building has always the charms of mystery, it always appears to be larger than its actual dimensions. The mouldings, the pillars, the arches, always create receding shadows; and to the mind, the idea of space arises from a succession of shadows, just as the conception of time results from the succession of ideas. In the earlier Gothic styles, the management of the aerial tints was studied with remarkable skill. The mouldings are all undercut, and the curves are almost invariably of the higher order; and the limbs of the apertures are marked by carrying the mouldings above the level of the wall. A small fillet also often runs down the front of the lesser columns. By these artifices all the forms of the building are brought out, *pencilled*, as it were, in chiaro scuro; for the minute linear projections catch the light and heighten it, and the undercutting deepens and mellows the shade.

Daylight is courted by the Gothic architect. The lines and masses of the roofs, buttresses, and transepts, the ascending pinnacles and towers, are marked and defined by the full blaze of noon, which falls upon them and contrasts itself with the freshness of the apertures, and the darkness of the walls which are behind the sunshine. Gothic architecture seeks to exclude the sight of middle earth. Its genius delights in quadrangles, cloisters, and porches; in piles which expand and close round the spectator, leaving him nought to contemplate but themselves and the sky.

Q.



Relative Proportions of St. Paul's, London, St. Peter's, Rome, and the Great Pyramid of Egypt.